MPG 7120.4 REVISION A

EFFECTIVE DATE: February 18, 2004

EXPIRATION DATE: February 18, 2009

MARSHALL PROCEDURES AND GUIDELINES

DA01

MSFC PROGRAM MANAGEMENT COUNCIL (PMC) PROCESS

Ma	arshall Procedures and Guidelines	
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DOCUMENT HISTORY LOG

Status (Baseline/			
Revision/	Document	Effective	
Canceled)	Revision	Date	Description
Baseline		8/16/02	Defines the MSFC Program Management Council Process.
Revision	A	2/18/2004	Adds Appendixes for Content of Termination Reviews, Explanation of Red Health Status, and Monthly Health Status Reports. Deleted references to Lead Center PMC. Updated presentation content requirements for formulation and implementation requests. Directs PPA to coordinate its WBS and charge code assignments. Documents the requirement for Health Status reports being due by the 10 th of each month for each MSFC program and project. "Out-of-scope" phrase changed to "re-baselined". Organizational changes in S&MA, SMO, UP, XP and NP were incorporated. Separate appendixes for Out-of-Board process were deleted. Changed "NPG" to "NPR" throughout the document.

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PREFACE

P.1 PURPOSE

This procedure defines the process for accomplishing the responsibilities of the MSFC Program Management Council (PMC). The PMC normally convenes as a result of activities driven by MPG 7120.1. Responsibilities of the MSFC PMC are defined in MPD 1150.1, Charter MC-08.

P.2 APPLICABILITY

This MPG applies to all proposed and established MSFC-managed Programs, Projects, and Activities (PPA) that Provide Aerospace Products and Capabilities (PAPAC), excluding Research and Technology Objectives and Plans (RTOPS), Center Director's Discretionary Fund (CDDF), and Space Act Agreements. Responsibility to report to the MSFC PMC can also be expanded to include any other initiative as requested by the MSFC PMC Chairman.

P.3 AUTHORITY

MPD 1150.1, Charter MC-08, "MSFC Program Management Council"

P.4 APPLICABLE DOCUMENTS

- a. MPG 1230.1, "Center Resources Management Process"
- b. MPG 7100.1, "MSFC Proposal Development Process"
- c. MPG 7120.1, "Program/Project Planning"
- d. NPD 7120.4, "Program/Project Management"
- e. NPR 7120.5, "NASA Program and Project Management Processes and Requirements"

P.5 REFERENCES

None

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P.6 CANCELLATION

MPG 7120.4 dated August 16, 2002

Original signed by Axel Roth for

David A. King Director

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DOCUMENT CONTENT

1. ACRONYMS AND DEFINITIONS

1.1 ACRONYMS

1.1.1	AO	Announcement of Opportunity
1.1.2		Center Operations Directorate
1.1.3		Authority to Proceed
1.1.4		Cooperative Agreement Notice
1.1.5		Customer and Employee Relations Directorate
1.1.6		Center Director's Discretionary Fund
1.1.7		Critical Design Review
1.1.8		Civil Service
1.1.9		Enterprise Associate Administrator
1.1.10		Engineering Directorate
1.1.11		Flight Projects Directorate
		Full Time Equivalent
1.1.13		Governing Program Management Council
1.1.14		Goddard Space Flight Center
1.1.15		Independent Assessment
1.1.16		Independent Implementation Review
1.1.17		Life Cycle Cost
1.1.18		Office of Chief Counsel
1.1.19		Marshall Management System
1.1.20		Mission Operations and Data Analysis
1.1.21	MP	Space Shuttle Propulsion Office
1.1.22		Marshall Procedures and Guidelines
1.1.23	MSFC	Marshall Space Flight Center
1.1.24	NAR	Non-Advocate Review
1.1.25	NASA	National Aeronautics and Space Administration
1.1.26	NP	Next Generation Launch Technology Program Office
1.1.27	NPD	NASA Policy Directive
1.1.28	NPR	NASA Procedural Requirements
1.1.29	NRA	NASA Research Announcement
1.1.30	OS	Equal Opportunity Office
1.1.31	PAPAC	Provide Aerospace Products and Capabilities
1.1.32	PCA	Program Commitment Agreement
1.1.33	PDR	Preliminary Design Review
1.1.34	PMC	Program Management Council
1.1.35	PPA	Program, Project, or Activity
1.1.36	PRR	Project Requirements Review
1.1.37	PS	Procurement Office
1.1.38	QD	Safety and Mission Assurance Directorate
1.1.39		Request for Proposal
1.1.40		Reusable Launch Vehicle
1.1.41		Office of the Chief Financial Officer
1.1.42	RS40	Project Analysis Group

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1.1.43	RS60	Budget Integration Office
1.1.44	RTOPS	Research and Technology Objectives and Plans
1.1.45	SC	Support Contractor
1.1.46	SD	Science Directorate
1.1.47	SMO	Systems Management Office
1.1.48	SRR	System Requirements Review
1.1.49	TD	Space Transportation Directorate
1.1.50	UP	Orbital Space Plane Program Office
1.1.51	WBS	Work Breakdown Structure
1.1.52	XP	X-37 Project Office

1.2 DEFINITIONS

- 1.2.1 Activity. Multi-directorate collaborative effort not included in an MSFC-managed program or project.
- 1.2.2 <u>Agency PMC</u>. The Senior Management group, chaired by the Deputy Administrator, responsible for reviewing and approving proposed programs, and overseeing their implementation according to Agency commitments, priorities, and policies.
- 1.2.3 Champion. The person committed to the concept and responsible for the technical content of the proposal is the Champion. The Champion is responsible for the proposal and the planning necessary to demonstrate that the mission objectives can be met within cost and schedule constraints. The Champion is responsible for positioning to win and aligning Independent Research & Development (IR&D) requirements and content (technical and programmatic) to meet the customer needs.
- 1.2.4 <u>Directed Work</u>. Work not usually requiring proposal development that has been requested by NASA Headquarters.
- 1.2.5 <u>Enterprise PMC</u>. The Senior Management Group, chaired by the Enterprise Associate Administrator, responsible for providing advice, counsel, and recommendations relating to planning, implementation, and management of selected Programs and Projects.
- 1.2.6 <u>Formulation Authorization</u>. Authority given by the Agency PMC or designated Governing PMC for a Program or Project to start the formulation phase.
- 1.2.7 Governing Program Management Council (GPMC). Forum composed of NASA Agency and/or Center Senior Management that assesses program and project planning and implementation and provides oversight and direction as appropriate. Management bodies designated as GPMC have responsibilities to approve, disapprove, or terminate Programs or Projects assigned to them.

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- 1.2.8 <u>Implementation Authorization</u>. Authority given by the Agency PMC or designated GPMC for a Program or Project to proceed into the Implementation phase.
- 1.2.9 <u>Independent Evaluations</u>. Reviews conducted by a primarily non-advocate team for the purpose of providing external assessment and recommendations within its established scope. Independent evaluations include those planned as a routine course (i.e., Independent Assessment (IA), Non-Advocate Review (NAR), Independent Implementation Review (IIR)).
- 1.2.10 <u>Life-Cycle Cost (LCC)</u>. The total of the direct, indirect, recurring, nonrecurring, and other related expenses incurred, or estimated to be incurred, in the design, development, verification, production, operation, maintenance, support, and retirement of a system over its planned lifespan.
- 1.2.11 MSFC PMC. Forum composed of Center Senior Management that assesses MSFC-managed PPA planning and implementation and provides oversight and direction as appropriate. (When MSFC-managed Projects report to a GPMC, they should provide a status to the MSFC PMC prior to reporting to the GPMC).
- 1.2.12 <u>Project</u>. Significant activities designated by a program and characterized as having defined goals, objectives, requirements, life-cycle costs, a beginning, and an end.
- 1.2.13 <u>Program</u>. Activities within an enterprise that have defined goals, objectives, requirements, phased funding levels, and consist of one or more projects.
- 1.2.14 Provide Aerospace Products and Capabilities (PAPAC)

 Process. The cross-cutting process defined in NPR 7120.5 by which the Agency formulates, approves, implements, and evaluates programs which are established to provide space, ground, and aeronautical systems, technologies, services, and operational capabilities to NASA customers.

2. RESPONSIBILITIES

- 2.1 MSFC PMC shall:
- 2.1.1 Review and commit MSFC resources to new work opportunities consistent with MSFC/Agency strategy.
- 2.1.2 Resolve inter-Directorate issues.

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- 2.1.3 Evaluate MSFC PPA, provide direction, and make appropriate recommendations to PPA and GPMC (e.g. reformulate, enter implementation, terminate project, etc.).
- 2.1.4 Review independent evaluation findings (IA, NAR, IIR).
- 2.2 <u>The Champion/Lead Directorate</u> shall notify the MSFC PMC secretary of its decision to pursue proposal development for the new work opportunity.
- 2.3 Managers of PAPAC PPA shall:
- 2.3.1 Prior to presenting to the MSFC PMC, coordinate the PPA's cost estimate with RS01. The PPA must develop and coordinate the PPA financial WBS and the PPA technical WBS development so that the required correlation exists and is validated by RS40 and RS60.
- 2.3.2 Present resource requirements and planning information to the MSFC PMC for formulation/implementation/rebaselining purposes in accordance with this document.
- 2.3.3 Notify the MSFC PMC secretary if a PPA receives formulation or implementation authorization from the GPMC. (Activities are briefed to the GPMC as part of a Program or Project, therefore GPMC approval of the associated Program or Project will constitute GPMC approval of the activity.)
- 2.3.4 Report monthly Program and Project health status by the 10th of each month for the previous month's performance (see Appendix I). An explanation including the cause, impact and mitigating actions of any Red health status condition will be presented to the MSFC PMC when identified (see Appendix H).
- 2.3.5 Provide the MSFC PMC Secretary with closure results from assigned actions.
- 2.4 The MSFC PMC Secretary shall:
- 2.4.1 Provide overall MSFC PMC coordination, schedules, meeting agendas, and preparation of meeting minutes.
- 2.4.2 Summarize new work opportunities to the MSFC PMC.
- 2.4.3 When the GPMC approves a project/program, summarize this activity to the MSFC PMC.
- 2.4.4 Summarize out-of-board activity to MSFC PMC.

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- 2.4.5 Present a status of MSFC PMC assigned actions to the MSFC PMC.
- 2.4.6 Maintain MSFC PMC minutes and the MSFC PPA list.
- 2.4.7 Evaluate presentation material to ensure compliance with format and content requirements.
- 2.5 <u>Independent Evaluation Teams</u> shall provide findings to MSFC PMC prior to briefing results of assessments to higher level PMC's.

3. PROCEDURE

3.1 General Method of Operation

- 3.1.1 The MPG 7120.1 is the overarching document that establishes the requirements for initiating an MSFC PMC meeting. When required, the MSFC PMC will convene to assess MSFC-managed PPA to ensure their readiness to proceed/continue with formulation or implementation. PPA managers will present to the MSFC PMC for six purposes:
- 3.1.1.1 Requesting the MSFC PMC for ATP with proposal development. MSFC PMC approval allows a proposal team to start and complete proposal development. Prior to submitting the proposal, the proposal team must obtain approval to start/complete the formulation phase. Content requirements are defined in Appendix B.
- 3.1.1.2 Requesting the MSFC PMC for approval to start/complete the formulation phase. MSFC PMC approval constitutes the MSFC commitment and recommendation to the GPMC for a PPA to start/continue the formulation phase. Content requirements are defined in Appendix D.
- 3.1.1.3 Requesting the MSFC PMC for approval to start/complete the implementation phase. MSFC PMC approval constitutes the MSFC commitment and recommendation to the GPMC for a PPA to start/continue the implementation phase. Content requirements are defined in Appendix E and are consistent with the content in the program/project plan.
- 3.1.1.4 Requesting the MSFC PMC for approval to rebaseline a previously approved PPA baseline. MSFC PMC approval constitutes the commitment and recommendation to the GPMC to rebaseline a PPA that is outside its approved cost, schedule or technical scope.

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Content requirements are defined in Appendix F

- 3.1.1.5 Present results of a termination decision. Content requirements are defined in Appendix G.
- 3.1.1.6 Present an explanation of a Red condition associated with PPA health status. Content requirements are defined in Appendix H.
- 3.1.2 A monthly health status report shall be provided for each Program and Project. This report shall be provided to the PMC secretary by the $10^{\rm th}$ of each month for the previous month's performance. Content requirements are specified in Appendix I.
- 3.1.3 In addition to the PPA presentations to the MSFC PMC, independent evaluation teams (e.g. IA, NAR, or IIR) will periodically report their findings and recommendations to the MSFC PMC. Evaluation team findings shall always be provided to the MSFC PMC prior to briefing higher-level PMC's (see Appendix A for NASA's PMC hierarchy). The MSFC PMC briefings should be scheduled through the MSFC PMC Secretary.
- 3.1.4 Out-of-board decision-making by the MSFC PMC Chairman is not the preferred process and is to be used on an exception basis. All out-of-board decisions shall be documented in writing and provided to the MSFC PMC Secretary. The MSFC PMC Secretary will summarize all out-of-board decisions at the next MSFC PMC. Out-of-board activity should be limited to urgent, non-controversial matters. The out-of-board process is not permitted for a PPA requesting a change in PPA baseline.
- 3.1.5 The MSFC PMC Chairman will convene the Council, monthly or more often if required, to discharge the responsibilities and perform the functions of the Council. The MSFC PMC Secretary will coordinate requests for special MSFC PMC's with Center management. Managers of PPA and independent evaluation teams should plan their schedules based on the monthly MSFC PMC.
- 3.1.6 Attendance and participation by Center personnel will be as determined by the MSFC PMC Charter MPD 1150.1, "MC-08". The results of the Council's assessments will be documented in the form of findings and required actions. PPA managers will provide the MSFC PMC Secretary with closure results from assigned actions. The MSFC PMC Secretary will provide a status of MSFC PMC actions at each MSFC PMC meeting. The PMC chairman will determine if an action can be closed.
- 3.1.7 Although the MSFC PMC may commit MSFC resources and

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approve the planning for a PPA, the PPA must gain approval of the GPMC for authorization into formulation, implementation, or change in PPA baseline. Activities are briefed to the GPMC as part of a Program or Project, therefore GPMC approval of the associated Program or Project will constitute approval of the activity. Appendix A depicts the hierarchy of PMCs, which summarizes the role of the various PMC's and the relationships between the Agency PMC, Enterprise PMC, and MSFC PMC.

3.2 Formulation / Implementation Activities

	/	<u> </u>
Actionee	Step	Action
Champion/ Lead Directorate or Manager of PPA	3.2.1	Determination has been made to request an MSFC PMC meeting. This is usually a result of MPG 7120.1 (e.g. Formulation/Implementation requests or re-baseline of a PPA) or MPG 7100.1 (e.g. proposal development activities) process.
		Note 1: Notification of Directorate decisions to pursue new work opportunities through proposal development may be made using Appendix B and may not require an MSFC PMC presentation.
		Note 2: If a determination is made to seek an out-of-board decision, then the out-of- board decision shall be documented in writing and provided to the MSFC PMC Secretary
Champion/ Lead Directorate or Manager of PPA	3.2.2	The MSFC PMC Secretary is given notification of intent/reason. Reasons include: Request proposal development, Formulation request, Implementation request, Re-baselining request, Termination Decision, Explanation of Red Health Status, and independent evaluation briefing.

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MSFC PMC Secretary	3.2.3	The MSFC PMC Secretary so and provides the presente templates and instruction templates, depending on trequest, will generally foutlined in Appendices B-will be coordinated throusecretary.	er with presentation as. These the nature of the follow the material I. Any changes	
Champion/ Lead Directorate or Manager of PPA	3.2.4	Briefing package is devel to the MSFC PMC Secretary presenting to the MSFC PM estimate should be coordi Ensure financial and tech correlation.	v. Prior to MC, the PPA's cost .nated with RS01.	
MSFC PMC Secretary		The PMC secretary reviews material to ensure contensatisfied. The MSFC PMC a summary of the package members prior to face-to-meeting.	t requirements are Secretary provides to the MSFC PMC	
MSFC PMC	3.2.5	The MSFC PMC is convened. members will evaluate premake recommendations, and required.	esentation material,	
MSFC PMC Secretary		The MSFC PMC Secretary wi At the conclusion of the PMC Secretary will review and make corrections as r PMC Secretary will also s of-board" decisions since meeting along with open a Actions will be assigned date by the MSFC PMC.	meeting, the MSFC the actions taken required. The MSFC summarize all "oute the last MSFC PMC actions items.	
MSFC PMC		Once satisfied, the MSFC the actions and dismiss this point the Champion/I managers of PPA proceed wor MPG 7100.1 process.)	the meeting. (At lead Directorate or	

3.2.6 The MSFC PMC Secretary will distribute

meeting minutes in a timely manner and maintain a record of the minutes. The MSFC PMC Secretary will update the MSFC PPA List

MSFC PMC

Secretary

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as required.

Champion/ Lead Directorate or Manager of PPA	3.2.7	Action closure submittals will be provided to the MSFC PMC Secretary. If an action becomes overdue, the actionee shall be present at the next PMC meeting to explain why the action was not completed and to request a new due date from the PMC chairman.
MSFC PMC Secretary		The MSFC PMC Secretary will track, review, and status actions to the MSFC PMC as required.

4. RECORDS

Record	Location	Retention Time	Disposition	Remarks
MSFC PMC Secretary Meeting Minutes - includes presentation material, meeting minutes and assigned actions and action closures	MSFC PMC Secretary Office	Per NPR 1441.1, AFS No 1150, Permanent	Retire to FRC when 2 years old. Transfer to NARA when 20 years old.	

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5. Flow diagram

3.2.1 MSFC PMC Meeting is required per MPG 7120.1 or MPG 7100.1 3.2.2 3.2.6 MSFC PMC secretary is given Minutes are distributed. notification that a MSFC PMC Records are maintained. is needed (e.g. Request ATP for proposal development, Formulation request, Implementation request, 3.2.7 Re-baselining request, Termination decision, Action closure submittals Explanation of Red Health are provided to the MSFC Status, or independent PMC secretary. Status evaluation briefing) briefings are provided to the MSFC PMC as required. 3.2.3 MSFC PMC Secretary schedules the meeting and provides templates (see Appendix B-H) 3.2.4 The Briefing package is developed and submitted to the MSFC PMC Secretary. 3.2.5 The MSFC PMC is convened. The meeting is conducted.

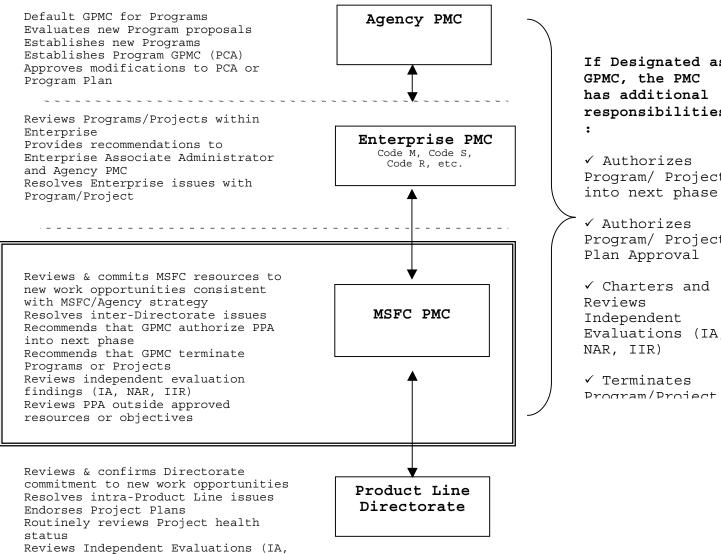
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APPENDIX A: PMC Hierarchy

CORE Roles

NAR, IIR)

Reviews GPMC presentations



If Designated as responsibilities

- Program/ Project
- Program/ Project
- Evaluations (IA,

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APPENDIX B: Requesting the MSFC PMC for Authority to Proceed with Proposal Development

(In general the Champion will provide the appropriate financial, technical, and programmatic data to assist the MSFC PMC in making a decision on whether to initiate the proposal development activities defined in MPG 7100.1.)

в.1	Name of Proposal:
в.2	Responding to: (AO, NRA, RFP, CAN, etc):
в.3	Directorate / Program Office:
в.4	Point of Contact:
в.5	Briefly state technical / scientific objectives:
в.6	Proposal Milestones (as applicable):
	Proposal design effort (Start/completion dates): Purple Team Review Date: Red Team Review Date: Proposal Submission Date: Proposal Selection Date:
	Note: Whether selected or not selected, the Champion/Directorate shall notify the MSFC PMC Secretary.
B.7	Cost cap/funding Level:

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B.8 Workforce requirements for proposal development (Specify Civil Servant (CS) and Support Contractor (SC) FTE's by Directorate). Enter a "dash" if no support is required:

		Month	Month	Month	Month	etc.	TOTAL
AD	CS						
	SC						
CD	CS						
	SC						
ED	CS						
	SC						
FD	CS						
	SC						
LS	CS						
	SC						
MP	CS						
	SC						
NP	CS						
	SC						
OS	CS						
	SC						
PS	CS						
	SC						
QD	CS						
	SC						
RS	CS						
	SC						
SD	CS						
	SC						
TD	CS						
	SC						
UP	CS						
	SC						
XP	CS						
	SC						
TOTAL	SC						
	CS						

в.9	Spec:	ify	any	knov	wn or	high:	ly p	robab	le M	MS wa:	Lver	rs/devia	ations
neede	ed. Sp	peci	fy a	any :	requi	rement	ts c	f MPG	710	0.1, 1	Prop	osal	
Deve]	Lopmei	nt P	roce	ess,	that	will	be	tailo	red	(e.g.	no	purple	team
or re	ed tea	am r	evie	ews)	:								

B.10	Known	Risks:				

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APPENDIX C: Suggested Presentation Format for Independent Evaluation Briefing

- C.1 Overview of PPA
- C.2 Scope of Review
- C.2.1 Independent Evaluation Team Members
- C.2.2 Schedule of Independent Evaluation Activities
- C.3 Findings:
- C.3.1 Differentiate between minor findings (i.e. observations)
 and major concerns
- C.3.2 Provide an overall assessment of the PPA's health
- C.4 Recommended Corrective Actions:
- C.4.1 When possible provide guidance to the PPA to correct findings
- C.5 PPA response to independent review findings:
- C.5.1 Document how the PPA plans to address the finding (a separate PPA briefing may be required)

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APPENDIX D: Requesting the MSFC PMC for Approval to Start/Complete the Formulation Phase - Presentation Outline

D.1 Description of "New Work" request

- Name of PPA and official acronym
- PPA Authority. Specify GPMC, HQ Code, Theme, and Program Responding to (e.g. Request for Proposal (RFP), Announcement of Opportunity (AO), NASA Research Announcement (NRA), Cooperative Agreement Notice (CAN); or directed work)
- Brief description of the PPA
- Include a diagram
- Explanation of alignment with MSFC and Agency strategic roles and missions (including PCA, Program Plan)
- Identify specific proposal development metrics*
- Commitment by "home" Directorate and affected Directorates
- Results of Purple and Red Team reviews of proposal*

Typical MSFC PMC Questions:

Who are your customers and stakeholders?

Did the Purple and Red team reviews identify any problem areas?*

*not applicable to directed work

D.2 Scientific and technical objectives

State the PPA objectives, performance goals and their relationship to the program objectives.

Typical MSFC PMC Question:

Have you made a technology readiness assessment for critical elements of initiative and associated technology readiness levels (TRL)?

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D.3 Center Resource Requirements

Workforce requirements. Specify Civil Servant (CS) and Support Contractor (SC) FTE's by Directorate. Enter a "dash" if no support is required:

		FY	FY	FY	FY	etc.	TOTAL
AD	CS						
	SC						
CD	CS						
	SC						
ED	CS						
	SC						
FD	CS						
	SC						
LS	CS						
	SC						
MP	CS						
	SC						
NP	CS						
	SC						
OS	CS						
	SC						
PS	CS						
	SC						
QD	CS						
	SC						
RS	CS						
	SC						
SD	CS						
	SC						
TD	CS						
	SC						
UP	CS						
	SC						
XP	CS						
	SC						
TOTAL	SC						
	CS						

D.4 Specify institutional services

- Identify MSFC facilities to be used (by civil service or contractor), new facilities, facility modifications, Information Technology improvements (e.g. larger bandwidth requirements), environmental, security, medical, etc.
- Specify time period that facilities are used.

Typical MSFC PMC Question:

Have workforce commitments been fully coordinated with all Directorates?

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D.5 Budget

- Provide a spend plan per fiscal year
- Indicate % reserves
- Indicate who holds the budget reserve
- Indicate if the Program has allocated reserve for a project
- Indicate the budget needed to complete the formulation phase
- Indicate the total life cycle cost
- Document pertinent budget assumptions

Suggested format for budget information:

	FY	FY	FY	FY	FY	FY	Etc.	TOTAL
Contract								
In-House								
Reserve								
TOTAL								

Budget assumption 1 ... Budget assumption 2 ... etc.

Typical MSFC PMC Question:

Do you consider your cost reserve allocations to be adequate?

D.6 Schedule

- Provide a master schedule
- Planned dates for all Formulation milestones including: Proposal Submission Date*:

Proposal Selection Date*:

PRR

SRR

- Planned dates for all Implementation milestones including:

PDR

CDR

DCR

Acceptance Review

Delivery

Launch date

Begin operations

*Not applicable to directed work

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D.7 Briefly describe the approach for accomplishing new work planning for the following:

New Work Planning (address compliance with NPR 7120.5)

- Project Plan
- Configuration Management / Data Management Planning
- Safety and Quality Planning
- Risk Management Approach/Planning
- COFR Process
- Export Control Plan
- Systems Engineering Management Plan/Systems Engineering Approach
 - -Operational concepts
 - -Significant concept trades
 - -Functional decomposition

Typical MSFC PMC Questions:

Will you fully comply with NPR 7120.5?

What reviews are you planning?

D.8 Management structure

- Provide an organizational chart
- Identify key team members
- Provide a Level 2 technical WBS with corresponding charge codes
- Identify planned partnering with contractors and other NASA Centers or international participants
- Specify roles and responsibilities

Typical MSFC PMC Question:

Have all partnering relationships been depicted on the organization chart?

D.9 Risks and technical challenges

- Identify top risks and mitigation strategies
- Provide a 5x5 risk matrix if available

Typical MSFC PMC Question:

Are there any significant technology challenges?

D.10 Competitive assessment

- State chances of winning proposal
- Request PPA formulation ATP

Typical MSFC PMC Question:

What are the chances of winning this proposal (applicable to proposals only)?

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APPENDIX E: Requesting the MSFC PMC for Approval to Start/Complete the Implementation Phase - Presentation Outline

E.1 PPA background (1-2 charts)

- Name of PPA and official acronym
- PPA Authority. Specify GPMC, HQ Code, Theme, and Program
- Brief description of the PPA.
- Include a diagram
- Explanation of alignment with MSFC and Agency strategic roles and missions (including PCA, Program Plan)
- Review of proposal development metrics with actual performance (not applicable to directed work)

Typical MSFC PMC Questions:

Are the PCA and Program Plan signed and do they include adequate funding/schedule?

Are the Program requirements clear/unambiguous and flowed down into the Project Plan?

Who are your customers and stakeholders?

Have you considered Lessons Learned that might apply to your project?

(2-3 charts covering top-level information)

E.2 Scientific and Technical Objectives

State the specific PPA objectives, performance goals and their relationship to the program objectives.

Typical MSFC PMC Questions:

Do you have baselined Science Requirements?

Have you done adequate Systems analysis and trades and have a handle on the System Requirements and a viable design concept that meets the science/technology requirements?

Have you made a technology readiness assessment for critical elements of initiative and associated technology readiness levels (TRL)?

Where is your maximum and minimum success criteria defined? What is your maximum and minimum success criteria?

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E.3 Center Resource Requirements (1-2 charts)

Workforce requirements. Specify Civil Servant (CS) and Support Contractor (SC) FTE's by Directorate. Enter a "dash" if no support is required:

		FY	FY	FY	FY	etc.	TOTAL
AD	CS						-
	SC						
CD	CS						
	SC						
ED	CS						
	SC						
FD	CS						
	SC						
LS	CS						
	SC						
MP	CS						
	SC						
NP	CS						
	SC						
OS	CS						
	SC						
PS	CS						
	SC						
QD	CS						
	SC						
RS	CS						
	SC						
SD	CS						
	SC						
TD	CS						
	SC						
UP	CS						
	SC						
XP	CS						
	SC						
TOTAL	SC						
	CS						

E.4 Specify institutional services

- Identify MSFC facilities to be used (by civil service or contractor), new facilities, facility modifications, Information Technology improvements (e.g. larger bandwidth requirements), environmental, security, medical, etc.
- Specify time period that facilities are used.

Typical MSFC PMC Questions:

Have you documented your MSFC workforce requirements using the CWC process? Are there any issues?

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E.5 Budget

- Provide a spend plan per fiscal year
- Indicate % reserves
- Indicate who holds the budget reserve
- Indicate if the Program has allocated reserve for a project
- Indicate the total life cycle cost
- Document pertinent budget assumptions

Suggested format for budget information:

	Prior	FY	FY	FY	FY	FY	FY	Etc.	TOTAL
Contract									
In-House									
Reserve									
TOTAL									

Budget assumption 1 ... Budget assumption 2 ... etc.

Typical MSFC PMC Questions:

Has SMO provided you with an Independent cost estimate.

Does the LCC include spares, trainers?

Is this Program Critical Hardware (PCH)?

Is your schedule realistic and do you have adequate schedule reserve?

Are you using EVM?

E.6 Schedule

- Provide a master schedule
- Indicate amount of schedule reserve in the critical path
- Completion dates for all Formulation milestones including: Proposal Submission Date*:

Proposal Selection Date*:

PRR

SRR

- Planned dates for all Implementation milestones including:

PDR

CDR

DCR

Acceptance Review

Delivery

Launch date

Begin operations

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E.7 Internal and Independent Evaluation Reviews (e.g. IA, NAR, or IRR)

- Results/Open Issues

Typical MSFC PMC Questions:

Are there any open issues, if so what is the scheduled closure date(s)?

E.8 Describe the key aspects for the following PPA implementation plans (2-3 charts total, "top-level")

- Project Plan (address compliance with NPR 7120.5)
- Configuration Management / Data Management Plans
- Safety and Quality Plans
- Risk Management Approach/Plan
- COFR Process
- Export Control Plan
- Systems Engineering Management Plan/Systems Engineering Approach
 - -Operational concepts
 - -Significant concept trades
 - -Functional decomposition
- Descope Approach/Plan (required when cost commitments are exceeded)

Typical MSFC PMC Questions:

What was the tailoring approach to the above mentioned items? Any MMS waivers/deviations requested/required?

Will you have a Level III and IV CCB?

Are you performing Insight or Oversight and are we penetrating to the proper level?

Has your team taken the Risk Management Class offered by MSFC S&MA?

What are your Technical Performance Measurements (TPM's)?

How do you handle requirements flow down from System level to EIS level?

Will you have a verification process and does it support a "test like you fly" philosophy?

What reviews are you planning/supporting (Show Schedule)? How are you covering Software IV&V?

How will your COFR statement read? What are we signing up for?

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E.9 Management structure and Acquisition strategies (1-2 charts)

- Provide an organization Chart
- Provide a Level 2 technical WBS with corresponding charge codes
- Identification of key team members
- Identify partnering with contractors and other NASA Centers or international participants
- Describe roles and responsibilities

Typical MSFC PMC Questions:

Identify your high-risk elements within the WBS?

Do you have adequate support from the ED, S&MA, and other Center experts and does that meet your Insight/oversight penetration requirements?

What type of contract instrument are you using and what if any issues do you have?

Do you anticipate any long lead procurements necessary before PDR or CDR?

E.10 Internal and/or External Agreements (1-2 charts)

Typical MSFC PMC Questions:

Are the agreements in place, are there any issues.

How are you covering Export Control?

E.11 Risk assessment and mitigation approach (1-2 charts)

- Identify top risks / mitigation strategies
- Provide a 5x5 risk matrix
- Review of catastrophic and critical risks, trends, and exit/acceptance strategies

Typical MSFC PMC Question: Talk about your top ten list.

E.12 PPA Implementation ATP Statement

(PPA's request to proceed into implementation.)

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APPENDIX F: Requesting the MSFC PMC for Approval to Rebaseline a Previously Approved PPA Baseline - Presentation Outline

F.1 Summary of Proposed Re-Baseline

- Complete the following table to provide a top-level comparison of the previously approved baseline vs. proposed re-baseline.

	Previously Approved PPA Baseline	Proposed Re-Baseline of PPA (state "no change" when applicable
Authority	Specify GPMC, HQ Code, Theme, and Program name	o Specify changes in PPA authority
Technical	o Summarize the previously approved PPA technical objectives	o Summarize the proposed changes in PPA technical scope.
Cost	o Current FY budget and total LCC	o Current FY budget and total LCC
Schedule	o Normally specify either a delivery date or launch date	o Normally specify either a delivery date or launch date
Workforce	o FTE's for Current year	o FTE's for Current year

- **F.2** Briefly state the root cause for requiring a rebaseline of the PPA.
- F.3 Describe in detail the portions of the PPA that must be rebaselined by comparing the currently approved baseline to the requested rebaseline. The level of detail shall be commensurate with level of detail provided in Appendix E.

For example:

- If Budget or reserves must be changed, provide a side-byside comparison of the previously approved budget vs. proposed re-baseline
- If PPA end date must be extended. Provide a side-by-side comparison of the previously approved master schedule vs. proposed re-baseline master schedule.
- If mission success criteria or technical objectives must be modified (e.g. descope), provide a detailed side-by-

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side comparison of the previously approved baseline vs. proposed re-baseline.

- If additional Center workforce is required, provide a side-by-side comparison of the previously approved baseline vs. proposed re-baseline.
- If acquisition strategy must be modified, describe any changes in the proposed re-baseline.

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APPENDIX G: Results of a Termination Decision - Presentation Content

G.1 PPA Authority:

- Specify Enterprise, Theme, and Program
- Specify Governing PMC

G.2 PPA Description:

- Specify PPA objectives
- Planned life cycle cost
- Specify PPA start date and planned completion date
- Estimate the % PPA was completed

G.3 Reason for Termination

- For example, technical objective could not be obtained, budget over-runs, inadequate reserves, schedule driven problems, etc.

G.4 Impact to MSFC/Agency

- Specify the impact to MSFC's mission by not accomplishing PPA goals
- Identify any technology gaps or unmitigated risks to MSFC's mission
- Termination costs associated with existing contracts

G.5 Hardware disposition

- Specify how any PPA hardware will be dispositioned (scrapped, long-term storage, etc)

G.6 Records Retention

- Specify how PPA records are being archived (analysis, drawings, review packages, lessons learned, etc.).
- Indicate workforce available to accomplish the records retention.
- Identify any workforce shortfalls in accomplishing records retention.

G.7 Decision from MSFC PMC

For example:

- Terminate program/project (when MSFC PMC is the GPMC)
- Determine if the PPA is conducting the termination process in a suitable manner.

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APPENDIX H: Explanation of Red Health Status to the MSFC PMC - Presentation Content

H.1 Name of PPA:

- Provide a one or two line description of the PPA and its objectives

H.2 Description of Red Condition:

- Clearly state how the condition does not meet the approved PPA baseline (e.g. launch date has slipped 6 months from approved baseline)
- Cost: Exceeds approved planned budget and exceeds approved reserves
- Schedule: Reserves for critical path have been depleted and PPA end date is expected to slip
- Technical objectives are not being met that threaten mission success criteria
- If Red in more than one area, provide a separate explanation for Cost, Schedule, Technical and/or Management
- H.3 Root cause(s) which resulted in the Red condition
- H.4 Corrective action the PPA is taking to resolve the issue
- H.5 Date when PPA will Present its proposed re-baseline to the MSFC PMC:
 - Consult with the PMC Secretary for available PMC dates and/or need to re-baseline your PPA
 - Commit to a date for re-baselining the PPA to the MSFC PMC, if required.

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APPENDIX I: PPA Monthly Health Status Report

- I.1 Each MSFC Program and Project is to be evaluated in four areas: Management, Cost, Schedule, and Technical using the Agency Stoplight Criteria, which is defined in paragraph I.2.
- I.1.1 The following information is to be provided in addition to the Red/Yellow/Green stoplight status:
 - Provide a full explanation of any Red or Yellow condition. Provide a separate explanation for each Red/Yellow reported.
 - Describe the root cause of any Yellow or Red condition
 - Describe the recovery plan associated with a Red or Yellow condition.
 - Explain how a Red/Yellow condition has improved to Green.
 - Report completion of major milestones

I.1.2 Suggested format for Monthly Health Status Report:

	Management	Cost	Schedule	Technical
Project ABC	G	Y	R	G
Project XYZ	Y	G	Y	Y

Project ABC

Explanation of Red/Yellow:

Cost -

Schedule -

Root Cause for Red/Yellow:

Cost -

Schedule

Recovery Plan:

Explanation of Improved Condition:

Project XYZ

Explanation of Red/Yellow:

Root Cause for Red/Yellow:

Recovery Plan:

Explanation of Improved Condition:

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I.2 The Agency Stoplight criteria is defined as:

- Green Progressing according to Plan
 - Meeting management plans* or commitments.
 - No action required.
- Yellow an area of concern
 - Deviating from plans* or commitments, but approved contingency/reserves exists to recover and successfully complete the program/project as approved.
 - Needs attention. Problem can be resolved within the reporting organization.
- Red a significant problem
 - Deviating from plans* or commitments, with insufficient approved contingency/reserves to recover and successfully complete the program/project as approved.
 - Needs action. Help required beyond the reporting organization to address the problem.
- * In Implementation, the appropriate document is the approved program/project plan. During Formulation, report against appropriate approval document (e.g. FAD or equivalent).

I.3 Element Definitions & Expanded Criteria

I.3.1 Management

Evaluate all Program/Project management planning and processes for completeness, accuracy, and compliance to NPR 7120.5 and MSFC Management System (MMS) instructions.

 $\underline{\text{Green}}$ - Plans, processes and risk management approach adequately satisfy Agency and MSFC Program/Project Requirements.

Yellow - Plans, processes and risk management approach do not adequately satisfy Agency and MSFC Program/Project requirements but issues are being addressed and can be accomplished internal to the initiative.

<u>Red</u> - Plans, processes and risk management approach do not adequately satisfy Agency and MSFC Program/Project requirements and issues cannot be resolved without help external to the initiative.

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I.3.2 Cost

Evaluate how the Program/Project budget is performing (EAC-Estimate At Complete) against the approved Program/Project Plan budget (BAC-Budget At Complete), and FY Actual versus Planned performance.

<u>Green</u> - Specified tasks are within approved budget plans, without utilizing reserves.

<u>Yellow</u> - Cumulative actual costs exceed cumulative planned costs and projected burn rate exceeds FY budget or EAC indicates use of reserves while remaining below approved BAC.

<u>Red</u>- End of Year (EOY) estimate exceeds FY budget, cumulative actual costs exceeds fiscal year budget, or EAC exceeds BAC.

I.3.3 Schedule

Evaluate the use of your Program/Project reserves (slack) to maintain the critical path schedule and ensure major milestones and the Program/Project delivery date(s) approved in the Program/Project Plan are met.

 $\underline{\text{Green}}$ - Major milestones are not delayed and burn rate of reserves for critical path schedule indicates approved delivery date is not expected to slip.

<u>Yellow</u> - Major milestones are delayed or calculated burn rate of reserves for critical path schedule indicates approved delivery date may slip.

<u>Red</u> - Reserves for critical path schedules are depleted and approved delivery date is expected to slip.

I.3.4 Technical Performance

Evaluate how the Program/Project is meeting the requirements that are documented in the approved Program/Project Plan.

 $\underline{\text{Green}}$ - Technical objectives are being met with no threat to $\overline{\text{mission}}$ success criteria.

 $\underline{\text{Yellow}}$ - Technical objectives are not being met and threaten mission success criteria, but an acceptable contingency plan exists to meet approved requirements.

<u>Red</u> - Unable to meet technical objectives and mission success criteria without help external to the initiative.